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ABSTRACT

This paper lists 86 specific teaching methods for outdoor educators in the areas of content, technique, and group management. The methods were gleaned from a 30-day river instructor course conducted by the National Outdoor Leadership School. Relevant content is the heart of learning. Careful selection and coverage of topics during a course will create backcountry users who are safer, more knowledgeable, and more responsible. In the area of content, 13 teaching techniques are listed, related to prioritization of content, use of central themes, promotion of physical activity, sequencing of content, breakdown of complex content into sections, development of planned curriculum, and other basic techniques. Nine additional techniques for a deeper content agenda and five issues concerning instructor attitude toward content are also given. The second broad area of effective outdoor education is teaching method. Varied presentation techniques are the means through which course content reaches students in meaningful ways. Fifteen techniques are listed in this area, including the use of appropriate humor, brevity, peer teaching, challenge, active learning, discussion, and others. Six additional techniques are listed for developing thinking skills, seven for creating a deeper agenda, and three for optimizing instructor attitude. The last broad area of effective practice relates to group management. Situation-specific group management facilitates an optimum environment in which basic student needs are met and progression to higher levels of learning is encouraged. In the area of group management, 28 techniques are listed for subcategories of student safety, student comfort, student attention, suggestions for early and late in the course, a deeper agenda, and instructor attitude. A few examples of innovative techniques demonstrated at the course are given. (TD)

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EFFECTIVE TEACHING TECHNIQUES FOR OUTDOOR EDUCATION

John Cederquist

ED 443 632

Abstract

Originating in a powerful outdoor learning environment, this substantial list groups specific teaching methods within three main areas: content, techniques, and group management. Some specific examples are included, as are a few characteristics of excellent instructors.

When I heard the learn'd astronomer,
When the proofs, the figures, were ranged in columns before me,
When I was shown the charts and diagrams, to add, divide,
and measure them,
When I sitting heard the astronomer where he lectured with
much applause in the lecture-room,
How soon unaccountable I became tired and sick,
Till rising and gliding out I wander'd off by myself,
In the mystical moist night-air, and from time to time,
Look'd up in perfect silence at the stars.

When I Heard the Learn'd Astronomer, by Walt Whitman

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Janie illustrates nutrition concepts while encouraging social interaction through a "What Food Am I?" game, Kate passes a candle around the circle of students on a dark, quiet evening to create an opportunity for each to uninterruptedly express her thoughts; Eric guides the group through a Socratic debate that pushes it to higher levels in examination of a wilderness issue; Dana relates the story of a teacher learning of his positive impact on a young person's life, years after the fact; Allison fakes a broken femur to shock the group out of complacent down-river travel; Dennison leads an in-pool fear-reduction technique useful for first-time kayakers; Dave explains topographic contours by presenting ink patterns drawn on his knuckles.

These and dozens of other educational techniques unfolded day-by-day to create an atmosphere of continual variety and interest. They are real-world examples of 86 teaching methods listed in these pages. Although particularly useful in outdoor education, many work in any classroom situation. Most were drawn from thirteen students and four instructors who participated in the National Outdoor Leadership School's River Instructor Course, May 1998; others came from additional experiential education classes.

This course, in which I was a student participant, became a living laboratory of teaching, composed of highly motivated people in an exciting outdoor environment. Careful planning was combined with a willingness to experiment, and a rich open-air classroom resulted. By design or by chance, most of the techniques listed were used at some point during the 30-day course; a few were discussed without demonstration. This paper evolved from an agenda item added to the course after a couple of us became interested in monitoring the surprising breadth of teaching ideas that emerged each day.

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The ideas are offered as a resource for improving courses. The list is not comprehensive; other teaching methods of value may be found elsewhere in the literature of experiential education. Additional caveats: innovation does not necessarily equate with effectiveness; use of too many techniques in one session is distracting; items here are offered without significant description or explanation. Regarding the latter, significant deficiency: a bibliography is provided to illuminate some of the methods, and the author of this article may be consulted for additional information. Techniques are numbered for ease of reference in potential discussions, and not necessarily by priority.

Effective outdoor education consists of relevant CONTENT, varied instructional TECHNIQUE, and situation-specific GROUP MANAGEMENT. Teaching techniques are grouped within these areas.

Content

Relevant content is the heart of learning. Careful selection and coverage of topics during a course will create backcountry users who are safer, more knowledgeable, and more responsible.

1 Consider priorities when planning educational experiences: *safety* of students and instructors, *environmental protection*, *improved self-concept* through skills acquisition, and a *quality educational experience* accomplished in an atmosphere of *mutual respect*. These may be used as core themes into which other content may fit.

2 Use of central themes is effective in tying content elements together.

3 Promote physical activity; motor learning is an important component of outdoor education.

4 Use *primacy of content*, presenting most important concepts first. In topographic map reading, students learn the meaning of black and brown, before learning what red and magenta represent. Exceptions are appropriate, however, when inductive learning is the goal: students assimilate details, then use them to draw generalizations.

5 Progression of concepts is important, as logical sequences allow movement to higher levels of understanding. Keep progressions clear, logical, and consistent. Similarly, basic activity skills precede more advanced levels of physical performance.

6 Break complex topics, such as ecology or first aid, into manageable sections.

7, 8 A planned, complete curriculum is important for learning in an organized fashion, and to assure that essential elements aren't missed. This doesn't preclude flexible agendas that respond to situational opportunities or constraints.

9 Effective timing of content is important: safety skills and *Leave No Trace* (LNT) are presented early; cultural history comes later.

10, 11 Acquiring safety skills is critical, but comfort skills are also important.

12 As the most important part of teaching safety, teach *prevention*.

13 Most classes are suitable for instruction in LNT. This is one of the content areas through which decision-making skills may be developed.

Deeper Agenda (Content)

14 Encourage students to improve their judgment and decision-making skills.

15 Foster initiative and build independent thinking skills.

16 Teach for development of leadership strengths that students may use on their own outings.

17 Promote mindful awareness of surroundings and processes.

18 Avoid "rule mentality" through discussion of *why*. Students may be better motivated through understanding consequences of bad choices, for themselves and for the group.

19 Use honesty and self-investment to establish an atmosphere of trust. Share personal anecdotes and relevant stories.

20 Include opportunities for service learning (volunteer work), such as conducting a project that supports resource managers' goals. Students usually enjoy seeing tangible evidence of their learning efforts. Agencies remember the value of hosting the class, and the resource is improved.

21, 22 Assure relevance of the subject to students' lives, and illustrate such relevance. Teach transferability of those new skills that may be useful beyond the course.

Instructor Attitude (Content)

23 Avoid dogmatism.

24 Conduct research, or read other's research, to keep content current and fresh.

25, 26 Share personal opinions, but identify them as such; encourage expression of opposing points of view.

27 Share teaching ideas and materials with colleagues. Likewise, draw useful resources from them.

Technique, or Teaching Method

Varied presentation techniques are the means through which course content reaches students in meaningful ways.

1 Make use of appropriate humor as a learning tool. "Insert some fun into each day's student fare, and laugh every day with your students."[1] Discourage inappropriate or potentially destructive humor.

2 Content may be more easily absorbed if presented in a brief format. This is especially true with beginners. Conversely, some students do well in long, detailed, or far-ranging classes.

3 Paul Petzoldt's "grasshopper method" of teaching allows hopping from one subject to another as circumstances suggest.[2] Avoid confusion by placing the subject in context with central themes.

4 Allow students the opportunity to share in teaching, as well as in leading. By teaching peers, students are more likely to learn fully the material they present.

5 Challenge students occasionally by placing them just outside their comfort zone, when this may be done safely.

6 Active involvement, motion, *doing* are extremely effective in supporting other forms of instruction.

7 Discuss, then demonstrate, then allow students to do.

8 Include available forms of media, such as writing boards, diagrams, and models. In classrooms, use video, computer projection systems, slides, and music. In the field, use natural props, such as floating a pine cone down a rivulet to illustrate hydraulic effects on a vessel.

9 Employ varied presentation techniques to reach different types of learners. Use seminars, clinics, lectures, and small group activities.

10 Use skits, games, role-playing, and simulations.

11 Require readings, research, assignments, or other projects that require student effort and involvement. These may be effective before, during, and after a session in the field.

12 Create interest and depth of coverage by inviting guest speakers. Bring them from outside, or from within the class.

13 A low-pressure method for encouraging expression is the "human Likert scale." Students array themselves along a physical line on the ground that represents a continuum of belief on some issue, from *agree* to *strongly disagree*.

14 Plan for diversity of experiences by addressing different format areas: participants and spectators; self-directed; non-competitive and competitive; self-improvement; social.[3] Competition is sometimes useful, but occasionally destructive; determine when, and for whom, it is appropriate.

15 Take advantage of teachable moments, as events unfold. A trailhead marker presents the opportunity to discuss resource management issues represented by the boundary; the unexpected sighting of a large animal makes more meaningful a discussion of its behavior.

Thinking Skills (Technique)

16 Preview new concepts to students, then present, then review.

17 Lead students from simple to complex concepts; occasionally, reverse this approach. Use techniques of inductive as well as deductive reasoning. Use Socratic questioning techniques. Inquiry-based education may be key to reaching students on deeper levels: students explain what they observe and investigate *relationships*.

18 Let students act on what they think. Guide them by capitalizing on what they already know.

19 Promote circular forms of thinking to promote deeper learning and transferability of skills. This involves keeping the "Big Picture" in focus, considering holistic relationships, and placing what is learned in context with general principles.[4]

20 Present *scenarios* in which students use higher levels of thinking to resolve situational dilemmas.

21 Schedule time for some form of writing. This activity may be one of the best vehicles for reaching deeper levels of analysis. Journal keeping, especially if guided, additionally yields a record of the class that may be useful to the student on subsequent journeys.

Deeper Agenda (Technique)

22 Address all human domains: cognitive / psychomotor / affective / spiritual. Some of these are easily programmed; others require subtle approaches.

23 Emotional experiences, not always programmable but inevitable on outings, may greatly augment learning.

24 All learners may perform best and learn most when actively engaged in the learning process and feeling good about themselves and each other.

25 Inspire, using various techniques to reach all students: stories, tales of personal experience, songs, poems, meditation, and scenic views.

26 Let students fail and learn through experience in the *School of Hard Knocks*. The *School of Soft Strokes* allows lots of instructor guidance, encouragement, and "hand patting." Both have their place.

27 Encourage each student to express himself. Allow time for this to occur. Create learning environments in which such expression may thrive.

28 Allow students (and instructors!) time to process what they've learned and to rest. Give them time to absorb surroundings and be alone. Schedule long breaks from instruction, from activities, and from each other.

Instructor Attitude (Technique)

29 Think in terms of learning techniques, rather than teaching techniques.

30 Use an eclectic, flexible approach to teaching. Avoid the trap of marrying oneself exclusively to a favorite method that may not reach students with different learning styles or divergent interests.

31 Take the time to *demonstrate* concern for students. Learn names early in the course; talk to each student, every day[5]; provide extra support to those who struggle.

Group Management

Situation-specific group management facilitates an optimum behavioral and physical environment in which basic student needs are met, to encourage progression to higher levels of learning and performance.

Early in the Course

1 Start sessions with icebreakers or personal introductions. Develop fresh ways to accomplish these.

2 State instructors' expectations clearly to set the tone; good initial coverage of detail reduces instructor "police work" in the field. Students want to know expectations regarding behavior, LNT, and other matters. Let them know there will be specific hazards, more challenge, and hopefully more learning potential, than in typical classrooms.

3 Invite expression of student expectations, to learn what they seek. Explain which may and may not be met.

For Student Safety

4 The setting must be *safe*: be aware of potential for lightning, rockfall, deadfall trees, flash flood, avalanche, hypothermia, animal or insect hazards, etc. Position classes accordingly.

5 Selection and screening of participants may be important in extended backcountry courses. This is difficult in open sign-up situations; reduced screening generally requires a less remote field setting.

For Student Comfort ***(Good Luck in Accomplishing These with Consistency!)***

6 Place students for maximum attention; change placement as needed.

7 To the extent possible, control the environment for comfort. Place students with backs to the sun; select times of optimal temperature and breeze level; match sun exposure to ambient temperature.

8 Remind students to bring to field lectures, demonstrations, or other activities, those items needed for comfort: warm clothing, sitting pad, and gear for protection from sun, rain, wind, and insects.

9 Schedule classes for times when students aren't hungry, sleepy or tired.

For Student Attention

10 Vary speaking volume and pitch, body position and proximity. Distribute eye contact among all students to cultivate attention; eye contact also reveals student needs. Avoid "flat affect" in facial presentation.

11 Avoid monotonic speaking styles and use breaks and pauses when speaking to a class.

12 Develop a voice that carries well.

13 Vary duration of presentation, pace, and content order to feed the need for stimulation.

14 Use "hooks" to capture attention, such as prefacing a safety talk with a true story of a trip gone awry.

15 Judicious use of shock and surprise may capture and hold attention.

16 Request students to "Drop the rope." This metaphor, useful in many gear-use situations, comes from knot exercises in which students focus on physical objects in their hands and become too distracted to observe demonstration of a technique.

17 Use team teaching to keep groups small, especially when covering complex subjects such as maps and route-finding.

Late in the Course

18 Use post-experience processing to deal with "leftover" issues and review critical content.

19 Conduct tests and final evaluations. Feedback is more meaningful if conducted both ways, between instructor and student.

20 Provide certificates of completion or other tangible rewards, if possible and appropriate.

21 Encourage students to continue the activity on their own and provide information on how to do this.

Deeper Agenda (Group Management)

22 Create an environment of active student involvement. Most students desire knowledge of and participation in decisions regarding schedules, instruction, leadership, and safety management. The latter should be everyone's responsibility.

23 Create opportunities for success; promote "I can succeed" attitudes. Build a sense of self-worth in students.

24 Strive for inclusiveness. Outdoor education provides a unique opportunity for people from disparate backgrounds to interact in a climate of equality, where each person's strengths may emerge.

25 Build an atmosphere of respect among all people involved with the class, and for others who may be encountered in the field. Encourage tolerance for expression of differing opinions.

Instructor Attitude (Group Management)

26 Consistently model behaviors desired in students, as instructors are always teaching through personal example. This is true of *hard skills*: students are likely to practice correct hygiene after noticing an instructor consistently wash hands before entering the kitchen. It is also true of *soft skills*: cooperative support between instructors may result in similar behavior among students.

27 Be patient when experiencing interruptions such as a bird flying over, begging identification. However, quickly bring the group back to the topic at hand. Review information frequently, as interruptions are common in the backcountry. This is especially important when presenting critical or complex material.

28 Acknowledge student fears. Remind yourself of your own fears at those times when student concerns seem trivial.

This paper began with techniques used by half the students and teachers on an instructor course. Here's some of what the other half did: Polk led a spirited animal tracking exercise; Matt, a river bag packing race; John produced "guest speakers" to add expertise in a desert ecology discussion; an introduction to canoeing demonstration was accomplished on dry land by Ashley; Joe introduced a mnemonic device that allows immediate retention of important concepts; Read taught a course-within-a-course for American Canoe Association instructor certification; Atila wove an animated hour-long tale linking Cortez, mountain men, pioneers, dam builders, and environmentalists, to illustrate a history still affecting river running issues; Mark interrupted boat unloading to extol the merits of Mullen plants found growing on the beach; Wendy increased group awareness of gender-related leadership issues when the need arose; Travis offered odd tidbits about the Juniper tree.

Most instructors know the importance of avoiding lax hazard management, but some are unaware of creeping complacency in teaching. "Our *attitudes* toward commitment and preparation are evident to students from the first contact onward."[6] There is no perfect class or teacher or student. *With effort, though, some may come close!* Consider five other "instructor attitude" tips: Be yourself. Be aware of your biases. Accept change, avoid ruts, remain open to constructive criticism. Take classes, to experience "studenting" and build your knowledge base. Take care of yourself, as fatigue or stress will affect teaching, or even cause injury.

Successful instructors ask themselves: is the class content stale? Are teaching methods interesting? Is the group being managed so all students are reached? Effective instructors have good judgment, flexibility, and enthusiasm for the backcountry experience. They possess skills in teaching, leadership, and communication. Most importantly, they are sincerely interested in their students and the quality of educational experience they receive.

End Notes

1 Nichols, Kirk L. (1998). University of Utah Department of PRT, NRL Instructor Field Training. September 1998.

2 Petzoldt, Paul (1984). *The New Wilderness Handbook*. New York, NY: W.W. Norton & Company, Inc.

3 Farrell, Patricia, & Lundegren, Herberta M. (1991). *The Process of Recreation Programming: Theory and Technique*, 3rd Ed. State College, Pennsylvania: Venture Publishing, Inc. (p. 99-118)

4 Prochazka, Larry (October 13, 1998). Personal communication.

5 Nichols, Kirk L. (1998). Thoughts on designing safe and educational NRL field courses. *NRL Instructor Newsletter* Vol. 2, Issue 1. University of Utah Department of PRT.

6 Ibid.

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Biographical Sketch

Since 1974, John Cederquist has taught children five– through eighteen–years–old, and has taught in the field with adults aged nineteen through seventy–four. He coordinates an 83–course Natural Resources Learning Program for the Department of Parks, Recreation and Tourism at the University of Utah. His outdoor education philosophy is to increase appreciation for wild places while focusing on student safety, improved self–concept, and acquisition of skills, and to accomplish these goals in an environment of mutual respect. He also thinks it is important to have fun, and lots of it!

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